

*Administrative Aspects of*  
Hospital  
Central  
Medical  
*and*  
Surgical Supply Service

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
Public Health Service

This document is the third in a series of publications about hospital central medical and surgical supply services. Other related volumes will appear at intervals. Earlier publications include:

Hospital Central Services: A Survey of Current Literature,  
Public Health Service Publication No. 930-C-8. 25 cents.

A Study of Hospital Central Medical and Surgical Supply  
Services, Public Health Service Publication No. 980-C-10.  
20 cents.

The above documents may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402. Free single copies are available from the Division of Hospital and Medical Facilities, Public Health Service, U.S. Department of Health, Education, and Welfare, Washington, D.C., 20201.

*Administrative Aspects of*  
Hospital  
Central  
Medical  
*and*  
Surgical Supply Services

U.S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE  
PUBLIC HEALTH SERVICE  
Division of Hospital and Medical Facilities  
Washington, D.C. 20201

Public Health Service Publication No. 930-C-12  
March 1966

---

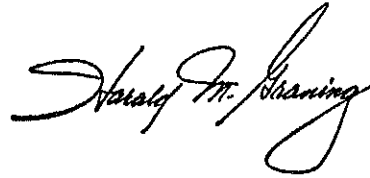
For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 - Price 30 cents

## FOREWORD

A recent Public Health Service study of Central Medical and Surgical Supply Services, in a sampling of general hospitals, disclosed a lack of uniformity in functions and procedures. It brought to the forefront the growing need for additional guide materials for hospital administrators and supervisors of such services.

To present a composite picture of factors to consider in planning these services, authorities in the field were requested to prepare relatively straightforward papers about one aspect of their particular specialty. These papers form the basis of this document. It is hoped the publication will prove useful to those responsible for the administration of Central Medical and Surgical Supply Services.

Mrs. Marie M. Lech, R.N., M.A., hospital nurse consultant of this division and author of one chapter, was the project director in charge of compiling this publication.

A handwritten signature in cursive script, reading "Harold M. Graning". The signature is fluid and elegant, with a large, sweeping initial 'H'.

HAROLD M. GRANING, M.D.,  
*Assistant Surgeon General,  
Chief, Division of Hospital  
and Medical Facilities.*

## ACKNOWLEDGMENTS

Appreciation is expressed to the following individuals for their chapters in this manual:

Miss Mary Helen Anderson, Assistant Administrator  
Little Company of Mary Hospital  
Evergreen Park, Ill.

Sister M. Diane, S. S. J., Nurse Consultant  
Sisters of St. Joseph  
Nazareth, Mich.

Miss Nan K. Kelley, Central Service Director  
Jackson Memorial Hospital  
Miami, Fla.

Mr. Mortimer W. Zimmerman, Executive Director  
Louis A. Weiss Memorial Hospital  
Chicago, Ill.

Thanks are due also to John R. McGibony, M.D., former chief of intramural research; Arthur E. Rikli, M.D., assistant chief for programs; and Miss Anita Reichert, assistant information officer, all of the Division of Hospital and Medical Facilities, for staff assistance; and to the many individuals, both from the division and elsewhere, who reviewed the preliminary draft and made valuable suggestions. They included hospital administrators, central service supervisors, nurses, pharmacists, environmental engineers, industry representatives, and other health specialists.

# CONTENTS

	Page
Foreword.....	iii
Acknowledgments.....	iv
 Chapter I. Administrative Considerations—Marie M. Lech.	
Definition of the Department.....	1
Objectives of the Department.....	1
Patterns of Administrative Structures.....	1
Status of the Department.....	2
Nurse Versus Nonnurse Supervisor.....	2
Committee Participation.....	2
Personnel.....	2
Number and Type.....	2
Personnel Requirements.....	2
Services.....	3
Departments To Be Serviced.....	3
Type of Materials To Be Provided.....	3
Processing of Supplies and Equipment.....	3
Hours of Service.....	3
Methods of Distribution and Collection.....	4
Physical Facilities and Equipment.....	4
Planning Committee.....	4
Written Program.....	4
Location.....	4
Floor Area Required.....	4
Workflow and Work Areas.....	5
Processing Equipment.....	5
 Chapter II. Relationships With Other Departments—Mortimer W. Zimmerman.	
General Considerations.....	6
Lateral Relationships.....	6
Administration.....	7
Business Office.....	7
Purchasing.....	7
General Stores.....	8
Personnel.....	8
Maintenance.....	8
Housekeeping.....	8
Laundry.....	9
Cooperation.....	9

	Page
Chapter III. Records and Reports—Mary Helen Anderson.	
Records.....	10
Definite Purpose.....	10
Simplified Forms.....	10
Effective Equipment.....	10
Time-Saving Procedures.....	10
Reports.....	11
Regular and Periodical.....	11
Special Reports.....	13
Six Easy Steps to Report Writing.....	13
Chapter IV. Product Testing and Evaluation—Nan K. Kelley.	
Standardization Committee.....	18
Purpose of Committee.....	18
Committee Members and Their Functions.....	18
Committee Meetings.....	19
Responsibilities of Committee Chairman.....	19
Testing and Evaluation Programs.....	19
Types of Programs.....	19
Participants in Programs.....	19
Activities of Programs.....	20
Implementation.....	20
Conclusion.....	21
Chapter V. Personnel—Mary Helen Anderson.	
Inservice Education.....	22
The Supervisor.....	22
Other Personnel.....	23
Part-Time Personnel.....	24
Job Descriptions.....	24
Supervisor.....	24
Assistant Supervisor.....	25
Evening and Night Supervisors.....	25
Auxiliary Personnel.....	26
Chapter VI. Disaster Planning—Sister M. Diane, S.S.J.	
Aim of Program.....	27
Responsibility for Disaster Program.....	27
Practical Application.....	27
Foresight in Planning.....	27
Principles of Disaster Planning.....	27
Procedures for Planning.....	28
Minimum Requirements for Disaster Supplies.....	28
References.....	28
Chapter VII. Budget—Sister M. Diane, S.S.J.	
General Considerations.....	29
Definition of Terms.....	29
Objectives of Budgeting.....	30
Principles of Budgeting.....	30
Preliminary Budget Preparation.....	30



	Page
Composition of a Budget.....	32
Operating Expense Budget.....	33
Capital Budget.....	35
Department Planning.....	35
References.....	37

## FIGURES

Number	Page
1. CMSSS Time Schedule.....	11
2. Productivity Report.....	12
3. Product Evaluation Form.....	14
4. Accident or Reportable Incident Form.....	15
5. CMSSS Control Panel.....	16
6. Record of Purchase.....	17
7. Maintenance Record.....	17
8. Patient Days for Years 1961-62.....	31
9. Patient Days for Years 1963-64.....	32
10. Comparative Study of Patient Days for 1961-62-63, and Approximate for 1964.....	33
11. Expense Budget: January Through June, 1964.....	33
12. Operating Expense Budget—1964.....	34
13. Capital Budget.....	35
14. Capital Equipment Budget—1964.....	36
15. Departmental Expense Budget.....	36



## Chapter I

# ADMINISTRATIVE CONSIDERATIONS

By MARIE M. LECH

### Definition of the Department

The Central Medical and Surgical Supply Service (CMSSS) is the department responsible for providing supplies and equipment required by all departments that render patient care, at the time needed, of the right quality and quantity, and in the proper condition for use. The scope of the services rendered will depend, however, on the individual hospital.

### Objectives of the Department

The objectives of the department are to provide:

- Supplies and equipment from a central department where all processing of such supplies and equipment is conducted under controlled conditions, thereby contributing to total environmental control in the hospital;
- Greater economy by centralizing expensive processing equipment in one central area;
- More uniformity by standardizing supplies, equipment, and techniques of operation; and
- More efficiency by training workers in precise processing procedures.

### Patterns of Administrative Structures

Several patterns of administrative structures of Central Medical and Surgical Supply Services are found in today's hospitals and include those which function under the direction of:

- The Nursing Department. The supervision of the service may be delegated to a supervisor, head nurse, or aide whose immediate supervisor may be the director or assistant director of nursing or the surgical suite supervisor;

- The pharmacist, with an assistant responsible for supervising day-to-day activities;

- Hospital administration. The department may be one of several service departments (such as purchasing, general stores, laundry, housekeeping, and maintenance), headed by a director, manager, or supervisor who is directly responsible to the hospital administrator or his assistant. Or the department may be under the direction of the assistant administrator in charge of materials management or the purchasing agent.

The use of disposables has increased the trend toward control by the hospital administrator, his assistant, or the purchasing agent. On the other hand, the rapid acceptance of manufactured parenteral solutions versus solutions prepared in the hospital by the pharmacist has contributed toward decreasing the previously close relationship between pharmacy and CMSSS.

In a recent study by the Division of Hospital and Medical Facilities,<sup>1</sup> most supervisors of these services who replied to a questionnaire were directly responsible either to the hospital administrator or his assistant or to the director or assistant director of the nursing department. In a few cases the supervisors were directly responsible to either the surgical suite supervisor, the pharmacist, or the purchasing agent.

One question in this study was: "For optimum efficiency, to whom would you have the supervisor responsible?" Nearly 40 percent of the super-

---

<sup>1</sup> U.S. Department of Health, Education, and Welfare, Public Health Service, Division of Hospital and Medical Facilities. *A Study of Hospital Central Medical and Surgical Supply Services*. PHS Publication No. 930-C-10. Washington, D.C., U.S. Government Printing Office, 1965, 40 pages.

visors gave as their preference the hospital administrator or his assistant.

The study further stressed the desirability of having the administration consider the CMSSS as a separate department and the supervisor as a department head. The larger the hospital and the more departments serviced, the more important it is that CMSSS report to administration as a department. Having to go through too many channels decreases the efficiency of service.

### *Status of the Department*

In many hospitals, the failure of administration to recognize the importance of the CMSSS and to give it equal status as a department has resulted in difficulties of effective operation. This department is recognized as an important and complex hospital service when its impact on the efficiency of services and the quality of patient care is considered. However, lack of equal status as a department may create difficulties in getting some personnel and/or department heads to accept the department and to use its services to best advantage.

### *Nurse Versus Nonnurse Supervisor*

The question of whether a nurse should supervise the Central Medical and Surgical Supply Service may best be answered by quoting the results of a study<sup>2</sup> conducted to learn the relative merits of the professional nurse as supervisor versus nonnursing management of the department. The investigator suggested that serious consideration be given to organizing the CMSSS under the supervision of a nonnurse who would be responsible directly to the hospital administrator or his assistant.

### *Committee Participation*

An advisory committee to the CMSSS should be established to help promote effective operation. This committee should include representation from all departments served by CMSSS. Participation by CMSSS supervisors on all committees which bear a close relationship to the department is also necessary. Such committees include the hospital infections committee, nursing procedures

or improvement of patient care committee, disaster committee, and standardization and product evaluation committee.

In addition, when plans are being made for the reorganization and/or any changes of this department or areas having any relationship to it, the CMSSS supervisor should be a member of the planning committee.

## **Personnel**

A major requisite for the successful functioning of any facet of a hospital program is personnel in adequate quantity and quality, and under competent supervision.

### *Number and Type*

In the Public Health Service study previously cited, the average number of full-time personnel employed in the services studied ranged from about 5 employees in the hospitals having 50-99 beds to 32 employees in the hospitals with 500 beds and over. Some of the hospitals did not use either part-time employees or volunteer workers in the CMSSS. However, when part-time personnel are used, the following factors merit consideration:

- The added responsibility of the supervisor in the orientation and training of part-time personnel;
- The instability of attendance, which decreases the efficiency of the department;
- The possibility of error in the preparation of supplies due to the infrequency of handling, which may have serious consequences on patient care.

Because of the details involved in CMSSS work, volunteers should not be assigned to this service.

The various types of personnel required for this service and their suggested titles include the following:

Director or supervisor  
Assistant director or supervisor  
Evening and night supervisors  
Technician or Aide  
Messenger or Orderly  
Clerk or secretary

### *Personnel Requirements*

Standards for personnel requirements cannot be given because of the great variation in the following factors:

- *Scope of functions*—In addition to basic sup-

<sup>2</sup> Fraser, G. I. "Who Should Operate Central Service? Nurses or Others?" *Hospital Management*, 92: 81+, December 1961.

plies and equipment, some services may be delegated the responsibilities for processing instruments for the surgical suite and the labor-delivery unit, as well as the portable, orthopedic, and inhalation therapy equipment. The extent of the use of disposables is also a very important factor.

• *Scheduled hours of service*—The hours of service may vary from 8 to 24 hours per day including holidays and weekends or perhaps 8 to 16 hours on holidays and weekends. It is recommended, however, that provision be made for services on a 24-hour, 7-day-week basis.

• *Methods of distribution and collection*—The use of mechanical devices, such as vertical conveyors and dumbwaiters, is significant in the planning of personnel requirements. If such devices are not utilized, or if used but not located in or near the CMSSS, more time and additional personnel will be required for distribution and collection of supplies and equipment.

• *Physical facilities and processing equipment*—More production, with less personnel, can be expected if these services are physically located so that they are easily accessible to using departments and are planned to provide proper workflow, thereby eliminating any unnecessary steps in the performance of work. Time-saving equipment such as ultrasonic cleaners, flask washers, and high-speed sterilizers may also be utilized to great advantage.

## Services

### *Departments To Be Serviced*

The scope of services rendered will depend on the individual hospital, but all departments should be included which require supplies and equipment for patient care. Among them are the following:

Nursing Units	Radiology
Surgical Suite	Clinical Laboratory
Labor-Delivery Unit	Pharmacy
Nursery	Research Departments
Outpatient Department	

### *Type of Materials To Be Provided*

The type of materials to be provided by this department include the following:

- Dressings
- Needles and syringes
- Rubber goods (gloves, catheters, tubing)
- Solutions (parenteral and external)
- Administration sets

- Instruments<sup>1</sup>
- Thermometers
- Treatment trays and sets
- Utensils (including patients' bedside utensils)
- Sterile linen packs
- Miscellaneous items such as stopcocks, binders, and arm boards
- Portable, orthopedic, and inhalation therapy equipment

All hospitals use some disposable supplies although the extent varies considerably from hospital to hospital. Factors of importance to consider include the method of dispensing disposables (directly from general stores or through CMSSS), additional storage space required, and the disposal of these items.

Because of the risks involved, very few hospitals today prepare parenteral solutions. They are purchased, along with administration sets. External solutions, however, may be prepared in CMSSS and should be limited to sterile normal saline solution and sterile distilled water.

### *Processing of Supplies and Equipment*

Processing may be defined as the preparation of supplies and equipment for use in giving patient care. The operations necessary for processing reusable items include receiving, sorting, soaking (for some items), cleaning, assembling, inspecting, testing, packaging, labeling, sterilizing, dating, storing, inventory control, and issuing. When disposables are used a number of operations are eliminated, but the following are still necessary: receiving, storing, inventory control, and issuing.

### *Hours of Service*

Whenever possible, 24-hour service should be provided. The additional cost of staffing the service 24 hours per day should be studied; it may be possible to reschedule workloads so that some operations may be performed during the afternoon and night hours, with personnel reassigned accordingly. If a department is open 24 hours a day, lower quotas of supplies may be issued, thus decreasing the amount of storage space required in using departments. When the service is less than 24 hours a day, usually the afternoon and night-duty administrative supervisors are delegated the responsibility and authority to enter the depart-

---

<sup>1</sup> Consideration should be given to including the processing of instruments for the Surgical Suite and the Labor-Delivery Unit.

ment during unscheduled hours to obtain necessary supplies and equipment. Under this system problems in control may arise.

## Methods of Distribution and Collection

Carts, dumbwaiters, vertical conveyors, elevators, and pneumatic tubes, or various combinations of these methods of distribution and collection may be used. The proper combination depends on the design, organization, and size of the hospital.

## Physical Facilities and Equipment

### *Planning Committee*

In the early organization of the CMSSS, a planning committee should be appointed to prepare a written program and to function in an advisory capacity to the department. The membership of this committee should include representatives from the following departments: Administration, Medical Staff, Nursing Service, Nursing Education, Anesthesiology, Pharmacy, Radiology, Clinical Laboratory, and Purchasing.

### *Written Program*

The major responsibility of a planning committee is to prepare a written program which should include statements covering the following:

1. The purpose and objectives of the department;
2. The administrative structure and the organization of the department;
3. The departments to be serviced;
4. The services to be rendered, including the hours of service, a list of the major supplies and equipment which will be provided, and the estimated quantities of each;
5. The methods of distribution and collection to be used;
6. The issuance of disposable items—to using units either directly from general stores (with only a minimum supply to be kept in CMSSS) or through CMSSS;
7. The number and type of personnel required;
8. A detailed description of how the work will be done, including the specific methods to be used in performing the operations;
9. An outline of workflow and work areas, including all essential processing equipment required to perform the operations;

10. An estimate of duties that may be delegated to the department in the future, and other anticipated changes.

### *Location*

Accessibility to central transportation facilities such as elevators, dumbwaiters, vertical conveyors, and stairs is of the utmost importance in determining the location of the CMSSS. This service should be located in a "service core" area adjoining departments from which it receives materials, such as general stores and the laundry, and should also be centrally located in relation to the departments which are the largest consumers of its services. Generally, the largest consumers will be the nursing units, although in hospitals having less than 200 beds it may be the surgical department (including the recovery room).

### *Floor Area Required*

In planning the total amount of floor area required, consideration should be given to flexibility and to the possibility of increasing services as the needs of the hospital grow. It has been recommended that, after present space has been reviewed and the immediate total area needed has been determined, an additional 25 percent should be allocated for future expansion.

In some hospitals the CMSSS maintains the storeroom for all medical and surgical supplies. The storeroom, to which supplies from manufacturers are delivered, is physically located next to CMSSS. Thus, both considerable floor area and time are saved by eliminating the need for reissuing supplies from general stores to CMSSS.

Ample storage space for large equipment is very important. In addition, space for the following is frequently inadequate or overlooked.

- Holding areas for collection carts; for loaded sterilizer carriages prior to sterilizing; for carriages during the cooling period following sterilization; and for carriages of sterilized supplies for the surgical suite and labor-delivery unit prior to delivery of these supplies;
- Supervisor's office;
- Separate lockers and rest rooms for female and male personnel;
- Janitor's closets;
- Allocation of area for the clerk's desk and files.

## *Workflow and Work Areas*

It is imperative that the workflow pattern be so planned that personnel traffic and the transmission of supplies and equipment be accomplished in an efficient manner; that the flow of work will be continuous from receiving to issuing without retracing steps; and that the receiving and clean-up areas be physically separate from the remainder of the department.

Opinions vary concerning the advantages of the "U" shape layout versus the straight-line flow pattern. Both plans are designed to insure a logical flow of supplies to eliminate backtracking; the "U" shape is more compact because long aisles are eliminated. Workflow must be planned so as to have a separate entrance to the department for receiving soiled and contaminated materials from using departments, and another for issuing clean and sterile supplies and equipment. In addition, another entrance for receiving materials from general stores and the laundry is necessary. If the laundry is located adjacent to the CMSSS, the connecting door may open directly into the linen room.

In planning the work areas, an attempt to as-

sess accurately the future impact of the use of disposables is most important. The use of larger numbers of disposables may eliminate the need for certain processing equipment. Although many believe that the more extensive use of disposables will also decrease the number of work areas needed, it must be remembered that other responsibilities have been delegated to CMSSS. These include the processing of patients' bedside utensils, thermometers, instruments for the surgical suite and labor-delivery unit, portable equipment, orthopedic equipment, and inhalation therapy equipment. It is necessary to supplement the outline of work area arrangements with detailed procedures for the processing of supplies and equipment.

## *Processing Equipment*

Many advancements have been made in developing mechanical equipment which has simplified processing procedures and increased the efficiency of CMSSS, such as ultrasonic cleaners, washer-sterilizers, and high-speed sterilizers. It is important, however, to evaluate carefully the type of equipment best suited to the needs of the department.

## Chapter II

# RELATIONSHIPS WITH OTHER DEPARTMENTS

By MORTIMER W. ZIMMERMAN

### General Considerations

The relationship of the Central Medical and Surgical Supply Service to the other departments of the hospital depends to a great extent upon the basic organizational structure of the individual hospital. This service may be an integral division of the nursing department, or it may be a separate department or unit of the hospital reporting directly to administration. There seems to be a definite trend toward the latter relationship in recent years; however, the basic responsibilities and relationships between this service and the other departments of the hospital do not necessarily depend on its location in the organizational structure. It performs a staff function for the remainder of the hospital regardless of its place in the administrative structure. The obligation of CMSSS to serve the patient directly throughout the hospital and indirectly through the various departments of the hospital is one which is unique and overriding.

Functions and scope of services of CMSSS are discussed in detail in a separate publication on procedures.<sup>1</sup> Responsibilities include such basic operations as delivery of supplies and equipment and the collection of used equipment. These services must be prompt and reliable.

CMSSS also assures all consumers of sterile supplies that sterility has been carefully achieved and is guaranteed to the ultimate user. While this is made possible through the performance of care-

fully established procedures and constant sterility checks, the important point is that the nursing units and specialty areas throughout the hospital do not themselves have to be concerned about the assurance of sterility so long as the package is intact. Instead, they may depend upon the implied guarantee which comes with the product from CMSSS which also participates in testing and evaluating new products, and provides advisory services on request. The latter may include recommendations concerning advantages and disadvantages of alternative products or brands, as well as disposables, and studies leading to solutions to specific problems. CMSSS likewise can maintain a continuing check on the quality, sterility, and standards of items purchased prepackaged and prepared outside the hospital, and can thus relieve individual departments of the responsibility for this check.

### Lateral Relationships

Since the relationships to departments serviced by CMSSS are covered in the procedures manual previously cited, the discussion in this chapter will be confined to relationships with the following departments:

- |                   |                |
|-------------------|----------------|
| • Administration  | • Personnel    |
| • Business office | • Maintenance  |
| • Purchasing      | • Housekeeping |
| • General stores  | • Laundry      |

The coordination of the activities of these departments requires a definition and understanding of responsibilities and effective communications. The following analysis of the relationship of CMSSS to these departments should be consid-

<sup>1</sup> U.S. Department of Health, Education, and Welfare. Public Health Service, Division of Hospital and Medical Facilities. *A Manual for Hospital Central Medical and Surgical Supply Services*. PHS Publication No. 930-C-13. Washington, D.C., U.S. Government Printing Office, 1966.



ered purely as a guide, since it cannot possibly be all-inclusive in terms of all of the relationships which exist in different hospitals throughout the country.

### *Administration*

CMSSS is the official adviser to administration in many areas. The supervisor may be a member of such vital committees as the committee on infections, procedures committee, standardization committee, and myriads of other administrative and medical staff committees where a positive contribution toward patient care and hospital efficiency may be made. Her unique knowledge and experience make available much information which can be valuable to administration, provided that it is properly channeled and reported.

CMSSS prepares regular periodic reports, which may or may not be routed through the nursing department depending on the organizational structure, but which ultimately should come to the attention of the hospital's administration. These records include not only reports on current activities and volume of services, but also information concerning productivity, equipment maintenance, periodic inventory of major equipment items, and perpetual inventory records on supplies. A most important function of CMSSS from an administrative point of view is that of cost control. Aside from the assistance which this service can give in making purchasing decisions, it is ideally suited to the job of evaluating the use of expendable supplies as well as capital equipment throughout the hospital. It can be alerted quickly to trends and changes in use, as well as to important differentials in use between various areas of the hospital. Thus CMSSS can promptly spot possible "leaks" and losses of inventory through other than normal use channels.

While administration can look to this service for these control factors and activities, CMSSS in turn can reasonably expect certain supporting activities from administration. These include written policies, written budgetary provisions for staff and equipment, adequate space and equipment with which to operate, and proper delegation of authority to carry out its functions. Strong administrative support is necessary to maximize the value which can be derived from a modern CMSSS, and this support should be proportional

to the kind of services which administration expects this department to perform within the hospital.

### *Business Office*

Simply stated, CMSSS is responsible for preparing and forwarding charges to the business office, to authorize patient billing for supplies used. It is also responsible for maintaining and turning in adequate time records for payroll purposes, and for keeping the business office informed of new items of equipment and new services which have been inaugurated and which may be charged to patients in the future. The bases of these charges may be set by CMSSS or they may be established in conjunction with other departments of the hospital such as nursing, the business office, and/or administration. At any rate, there should be a clear channel of communication between CMSSS and the business office at all times. In return, this service expects the business office to prepare payroll checks, furnish mail service, and give assistance with communication problems including telephone services, assistance in designing systems of charges and internal controls, and consultation on statistical and financial reports.

### *Purchasing*

The CMSSS supervisor, assisted by the advisory committee, prepares specifications for supplies and equipment. This department should cooperate in the preparation of inventory reports and should also inform the purchasing department of items held in stock which are no longer being used. Results of in-use testing of products carried out by CMSSS should be communicated to the purchasing department, which should also be kept informed of new products which appear on the market.

The purchasing department is responsible for passing along to CMSSS knowledge of new products which appear on the market as well as new procedures and techniques, and should act promptly to assist in procurement of authorized items for CMSSS. It is also responsible for maintaining an adequate supply of inventory items on hand at all times, and for obtaining products for testing and evaluation. Prompt procurement, adequate inventory, and good communication are the fundamentals of a successful relationship between these two vital departments of the hospital.

## *General Stores*

CMSSS is responsible, with others, for determining which items should be maintained in general stores and which should be dispensed through CMSSS. This will vary in individual hospitals; some have the routine requirement that every single item without exception must go through and be stored in general stores, and then be reissued to CMSSS. This service is responsible for technical assistance to general stores in determining the most advantageous methods of storage of various products, with special consideration to such matters as temperature and humidity control, maximum length of safe storage, and minimum and maximum stock levels.

In turn, CMSSS should receive adequate amounts of supplies in proper condition, and should be able to depend on prompt filling of authorized requisitions. Storerooms often perform other specialized services which are helpful and these sometimes include such functions as distribution of printed forms, operation of print shops, and duplicating facilities.

## *Personnel*

The personnel department functions as a service department to CMSSS as well as other hospital departments. In this relationship the CMSSS supervisor is responsible for keeping the personnel department informed of position vacancies, as well as providing complete job descriptions on all positions within the department. She should also complete periodic merit evaluation reports on all personnel so that the personnel department records on each individual employee will be complete and up to date. Another responsibility is that of adhering to the personnel policies in effect throughout the hospital and cooperating with the personnel department in the administration of these policies.

The supervisor can expect the personnel department to recruit the best-qualified applicants for vacant positions and to assist in orienting new employees and in designing and carrying out inservice training programs. The personnel department should keep abreast of current salary and personnel trends within the community and should recommend to administration the adoption of the necessary salary scales and personnel policies which will attract and retain good personnel.

## *Maintenance*

This department is of profound importance to CMSSS because of the vital dependence on the availability of equipment without excessive breakdown. Since the welfare and even the lives of patients may depend on the proper functioning of the equipment dispensed, the importance of maintenance service is obvious. However, much of the daily preventive maintenance of equipment, such as routine cleaning and minor adjustments, must be provided by CMSSS itself. It is generally thought advisable that CMSSS keep on hand a stock of vital small parts for use in the repair of essential equipment in the department, because it is impossible for the maintenance department to keep an inventory of each individual part and often there is not time to wait for formal orders to be placed through major supply houses for these units.

CMSSS also is responsible for instructing the maintenance department in the proper operation of specialized items of equipment, so that the repair function can be intelligently related to the operation of the equipment. This is an educational process which CMSSS willingly undertakes in order to obtain the best possible maintenance service for its equipment.

On the other hand, CMSSS personnel look to the maintenance department for a variety of other important functions. They take for granted the provision of adequate and uninterrupted heat, light, and power at all times. They can reasonably expect that prompt repairs will be made whenever called for, and that the maintenance department will cooperate to work out a preventive maintenance program and maintain records on all major items of equipment. They should seek advice from the maintenance department when conducting an evaluation study on a proposed piece of equipment, so that they may have some insight into special problems connected with the proper maintenance and repair of that equipment.

## *Housekeeping*

The housekeeping department should be responsible for the general cleaning of the CMSSS, although some supervisors are still somewhat reluctant to relinquish these responsibilities. The standard for cleanliness in CMSSS must be high and requires additional training and supervision for housekeeping personnel assigned to this area.

However, the CMSSS and housekeeping supervisors together should work out a program to determine the special cleaning needs of the department and how and when the cleaning will be done.

### *Laundry*

The amount of service received from the laundry may vary greatly from hospital to hospital. For example, in some hospitals the laundry may be delegated the responsibility for preparing all linen packs and may even be responsible for their sterilization. In others, the laundry delivers to CMSSS the freshly laundered linen required. Prompt delivery is important to avoid delay in servicing speciality areas and nursing units. Another major responsibility of the laundry is the

proper mending of linen returned for repair to ensure sterility of linen packs and items enclosed in linen wrappers when they are processed in CMSSS.

### **Cooperation**

To carry out its responsibilities to their maximum potential, CMSSS must accomplish its tasks in relation to the other departments and units of the hospital, and even more specifically through contacts with personnel of other departments. The measure of success thus depends on the cooperative working relationships and mutual attitudes which are developed in the hospital between CMSSS personnel and personnel from other departments.

## Chapter III

# RECORDS AND REPORTS

By MARY HELEN ANDERSON

Good reporting in the Central Medical and Surgical Supply Service, as in any other hospital department, is dependent upon good recording. Therefore consideration must be given to the foundation work—the maintenance of departmental records.

### Records

To be meaningful and effective, good recording includes the following:

#### *Definite Purpose*

The department should never keep "records for records' sake." The chief purpose of recording anything is that the information may be used at a later date. Before anything is recorded, an evaluation should be made: "Why keep track of this information at all?" Accepted reasons include (1) control measures, (2) cost finding, (3) work simplification procedures, (4) special studies, and (5) research.

#### *Simplified Forms*

Whenever a repetitive recording procedure is established, preprinted forms are recommended, even if simply mimeographed. One of the greatest wastes of time is the endless drawing of lines on a blank sheet of paper! A test run of manually drawn forms, however, is *not* a waste of time, but a prudent measure.

If the volume is great enough, preprinted, pre-assembled copy sheets should be obtained. Snap-out forms pay for themselves in saving of time. The value of specially treated paper that elimi-

nates the additional carbon sheets should not be overlooked when selecting recording forms.

#### *Effective Equipment*

Usually cards are more effective for record-keeping than sheets of paper or books. The card index folder or tray is an excellent aid in good recording.

The purpose of the record will frequently indicate the most appropriate device. Simple chalk boards have a real place for temporary recording, for example, of the "in and out" signature of employees leaving the department. The spindle should be considered a safety hazard. If one *must* be used, the type with the angulated spike is recommended. For short-span recording, the pegboard has many advantages. Manuscript clamps can be used with ease and effect.

#### *Time-Saving Procedures*

The weekly, biweekly, or monthly assignment record is one of the great thieves of supervisors' time. The listing of the same names week after week alone is responsible for use of many precious hours in a year. One set of names can be duplicated and slipped into place on an assignment sheet. The turnover should not be so great as to make this impractical. Repeating "7-3:30" perhaps a hundred times on a schedule can be replaced by listing all of the day names together and simply indicating days off by a check in the appropriate space. (See figure 1.) Again, the preprinted forms are an important tool. The same principles can be applied to other recording procedures such as supplies requisitions, items dispensed, unfilled requisitions, and telephone orders.

Figure 1. CMSSS Time Schedule.

A-ONE HOSPITAL  
Uto, Pa.

CMSSS Time Schedule

Month of: March 1965

Date.....	1	2	3	4	5	6	7	8	9	10	11	12	13	14 <sup>1</sup>	(Continue to 31)
Day.....	M	T	W	T	F	S	S	M	T	W	T	F	S	S	
Position No. 1 <sup>2</sup>	X	X								X				X	
2			X				X				X			X	
3				X			X				X	X			
4				X	X							X	X		
5					X	X							X	X	
6						X	X	X	X						

1. Miss Smith
2. Miss Jones
3. Miss Brown
4. Miss Kelly
5. Mr. Martin
6. Mr. Johnson

(all work 8 a.m. to 4:30 p.m.)

<sup>1</sup> This strip is prepared on heavy paper, inserted at heavy line left of 1st and moved to coincide with proper weekday.

<sup>2</sup> Position numbers are printed on heavy paper inserted at double line and moved down two lines each 2 weeks, 1-6 should be repeated twice (see diagram at right). This is for 1 tour of duty, with decreased staff on weekends. Similar patterns can be developed for 4 p.m. to 12 midnight and 12 midnight to 8 a.m.

1  
2  
3  
4  
5  
6

## Reports

Complete, concise, meaningful records should make the preparation of reports fairly simple. Several types of general reports should be considered, including regular and periodical reports and special reports.

### Regular and Periodical

The types of regular and periodical records required will be governed to some extent by the hospital's administrative policy. Of course, it is the task of the CMSSS supervisor to evaluate even the

reports that have been required traditionally. From time to time, the use of the reports should be investigated. Over and over, instances are related of reports being sent to an office only to be filed for an undetermined time and then discarded. The time of the discarding can tell much about the significance of the report. Too often, accumulated reports are discarded when pressure of space makes a general housecleaning necessary. The advent of a new administrative assistant may also cause a clearance of unused reports. The point is obvious—be sure reports are being used, or else request that they be discontinued.

Legitimate regular reports include:

*Total duty hours of personnel*—The timesheets or timecards which report the total duty hours of professional and nonprofessional personnel.

*Weekly or monthly productivity reports*—A review of the direction taken by the activity in the department should be important to administration. A productivity report would include the

number of gallons of distilled water prepared; trays processed; orders received and completed; and incompletd requests for supplies and equipment. (See figure 2.) These statistics are important because they indicate a trend. Therefore, the reports should be set up so that comparisons may be made readily. Since the number of days in a month vary, and the hospital census may fluctuate,

Figure 2. Productivity Report.

A-ONE HOSPITAL					
Uto, Pa.					
Productivity Report					
From: _____, 19__		To: _____, 19__			
Professional hours: _____	Remarks: _____				
Nonprofessional hours: _____	_____				
Part-time hours: _____	_____				
Position(s) vacant: _____	_____				
Trays processed:	_____				
Spinal _____	_____				
Cut-down _____	_____				
Paracentesis _____	_____				
Sternal Puncture _____	_____				
Etc. _____	_____				
Distilled water produced _____ gallons.		_____			
Syringes processed (nonexpendable):					
2 cc _____	5 cc _____	10 cc _____	20 cc _____	30 cc _____	50 cc _____
Unfilled requests (indicate the specific items): _____					
_____					
New products evaluated (indicate results of study): _____					
_____					
Equipment or supplies removed from CMSSS inventory: _____					
_____					
Reported by: _____					

a month-by-month comparison with 1, 2, or 3 years ago might be most significant. Such figures are important also in cost-finding.

### Special Reports

Special reports might include:

*Research data*—The reports for special projects would be developed by the person doing the research. Consistency and accuracy are the important requirements of such reports. If the supervisor is participating in a special study, a serious effort should be made to have the work completed on time and in the manner prescribed by the instructions.

One form of research is the evaluation of new products. When any product is given to the department for evaluation, a detailed report should be submitted to the purchasing agent. (See figure 3.) The report should be objective, conclusive, and complete. "They didn't like it" is never an acceptable evaluation. Often an evaluation form is provided by the manufacturer, and it is important to have as many opinions as possible.

*Budgetary analysis*—Not all CMSSS departments are required to prepare a budgetary analysis report. If it is a part of the supervisor's job, records of use during the past year become important and should be available.

*Special recommendations for new procedures or new equipment*—The completeness of a recommendation report—documented by cost studies, pictures, tables, charts, and the like—will just about determine whether or not the recommendation will be accepted. Field trips to study methods in other hospitals are always an impressive part of such a report.

*Unusual occurrences (sometimes called accident or incident reports)*—Reports on unusual occurrences in CMSSS are the same as in other parts of the hospital, and the general form should be followed. Again, completeness is the important byword. Insurance companies depend upon accurate reporting, and a small oversight may be very costly to the person or to the hospital.

Figure 4 illustrates an accident or reportable incident form which is suggested if the hospital does not have a standard form. Copy should be made in duplicate, one for the CMSSS supervisor and one for administration.

*Inventory reports*—The detail of the inventory report is determined by hospital policy. If care-

ful records have been kept by the general stores department, an annual count of items in CMSSS may be quite unnecessary. If CMSSS controls have been well handled, the matter of assembling the equipment in the department should be relatively easy. (See figure 5.) Even if there is no equipment and furniture inventory control in the rest of the hospital, one should be established in CMSSS. All items of portable equipment should be numbered, and a record of dates of purchase and maintenance kept faithfully. (See figure 6.) A similar record should be maintained for each non-expendable item. Thus, at any time a report of supplies and equipment on hand will be a simple copy procedure. If a linen inventory is taken, the CMSSS will cooperate with the overall procedure and use the report forms provided for this purpose. A periodic CMSSS linen inventory is important so that supplies will not be depleted by nonreplacement of discarded items.

*Maintenance records*—A simple up-to-date maintenance record of costly equipment used within the department is an added safety feature. (See figure 7.) It also helps to determine whether or not maximum use and longevity of equipment is obtained.

### Six Easy Steps to Report Writing

It would seem appropriate to conclude the consideration of report writing by including "Six Easy Steps to Report Writing:"

1. To make room for the statistics that are really important and pertinent, *eliminate* all records that do not have lasting value. For example, it is not necessary to keep tally sheets to indicate *where* steam inhalators were used during the past 12 months. It may be important to keep the *number of times* one inhalator was used. Take a look in the top shelves of closets, in the back of drawers, and in the bottom of cupboards. The amount of paper that can accumulate may surprise you.

2. *Evaluate* the present reports; follow through each group of statistics. One hospital found that for years and years the number of telephone calls coming into CMSSS was tallied and the totals sent to the nursing office. There they were duly recorded on a card which was filed and never consulted again. It seems that at one time an administrative resident was doing a study on the utilization of the interhouse phone, a form was developed

Figure 3. Product Evaluation Form.

A-ONE HOSPITAL Uto, Pa. Product Evaluation Form	
Trade name of product: _____	Number tested: _____
Function of product: _____	
Good features:	
(1) _____	
(2) _____	
(3) _____	
Undesirable features:	
(1) _____	
(2) _____	
(3) _____	
Comparison with product now in use:	
<input type="checkbox"/> None in use at present.	
<input type="checkbox"/> About the same as our present product.	
<input type="checkbox"/> Not as good as our present product because _____	
_____	
_____	
<input type="checkbox"/> Better than the product now in use because _____	
_____	
_____	
If the price is within reason, the adoption of this product:	Remarks:
<input type="checkbox"/> is not recommended.	_____
<input type="checkbox"/> is recommended.	_____
Date: _____	Evaluated by: _____
	Department: _____



**Figure 4. Accident or Reportable Incident Form.**

<b>A-ONE HOSPITAL</b>	
Uto, Pa.	
Accident or Reportable Incident	
CMSSS	
Date: _____ Time: _____ Reported by: _____	
Person(s) involved:	Witnesses (if personal injury):
(1) _____	(1) _____
(2) _____	(2) _____
(3) _____	
Equipment involved: _____	
_____	
What happened? _____	
_____	
_____	
What measures were taken: _____	
_____	
_____	
(1) Immediately? _____	
_____	
(2) To prevent a reoccurrence? _____	
_____	
Remarks: _____	
_____	
Report to be made out by person in charge of department at the time the incident occurred.	

Figure 5. CMSSS Control Panel.

CMSSS											
Control Panel *											
<u>Steam inhalators</u>				<u>Lifters, patient</u>				<u>Defibrillators</u>			
#1	#2	#3	#4	#1	#2			#1	#2		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
#5	#6	#7	#8								
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
<u>Aspirating machines</u>				<u>Drainage pumps</u>				<u>Croup tents</u>			
#1	#2	#3	#1	#2	#1	#2	#1	#2			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
#4	#5	#6	#3	#4	#3	#4	#3	#4			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
<u>Heating pads, electric</u>				<u>Isolation carts</u>				<u>Emergency carts</u>			
#1	#2	#3	#1	#2	#3	#1	#2				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
#4	#5	#6	#4	#5	#6	#3	#4				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
(Any other items requiring close control.)											

\*This panel may be made of plastic sheeting, X-ray film, or glass.

Small pressure-sensitive labels 1" x 1/2" are used for room number and date. When item is returned, label is removed. Outstanding items should be checked daily.

to tally the calls, and forever after the report was made.

3. *Determine* what information is required by administration, accounting, nursing service, and others. From this point work backwards to the source of this information, and the task of record-keeping will be accomplished with ease.

4. *Set a limit* on the method used. Once a report form is established, do not consider it to be etched in concrete—never capable of being changed. If printed forms are developed, the number ordered should be carefully considered. Remember, a monthly report requires only 12 copies. Too often, a 5-year supply is printed in the interest of "economy" and thus the report is

used for 5 years regardless of its efficacy. What happens far more frequently than we like to admit is that whenever a new person comes into authority, the old forms are all added to the ever-increasing stack of "scratch paper." An interesting study might be made of all so-called obsolete forms: why they are obsolete and what replaced them. When it is recognized that a report form is no longer of value, however, the fact that some ambitious person had a thousand sheets printed should not be the determining factor in the decision to change. The value of the report itself should be the prime concern.

5. Reports that are *comparative* have much more meaning than a single column of statistics. For

Figure 6. Record of Purchase.

Record of Purchase			
*Item	Description	Unit	Catalogue No.
Slatted Bed Board.	Complete w/ storage cover. For use on any type bed (36'' wide x 79'' long). Folds for storage.	1	893
Date Ordered	Name and Address of Vendor	Name and Address of Manufacturer	
March 3, 1965	Smith Supply Co. 4890—16th Street Springfield, Ill.	Robertson Equipment Co. 7832—R Street, N.E. Chicago, Ill.	
Date Received			
April 29, 1965			
Slatted Bed Board with Cover		Identification #11	

\*Separate card for each nonexpendable item. Name close to bottom edge for use in visible card file.

example, The Best Hospital's CMSSS may have processed 2,000 trays in 1961 at a specified cost per tray. The report dutifully shows this figure. What is really significant, however, is that in the same hospital in 1960 only 1,000 trays were processed by the same number of personnel, with no other changes in the production report. Has the

Figure 7. Maintenance Record.

Maintenance Record		
DATE	WORK DONE	REMARKS
1-8-63	Routine Safety Check.	Door needs replacement.
4-10-63	Replaced gasket on door.	
6-10-63	Replaced gasket on door.	
7-8-63	Routine Safety Check.	
Autoclave #1*	X-Y-Z Sterilizer.	Safety check January and July.

\*Separate card for each piece of equipment. Name close to bottom edge for use in visible card file.

supervision become more efficient? Perhaps the supervisor should have her salary increased!

6. Attempt to find the easiest method to compile the required statistics. *Uniformity* is the key here. A simple device of using the same format to list the items (either the vertical or the horizontal column, but not once one and again the other) can be helpful. Using the same size of paper can mean that lining up totals can be simplified. Snap-out forms can save time, as can the carbonized paper for temporary records. The printer's representative often can be helpful in the preparation or selection of report forms.

## Chapter IV

# PRODUCT TESTING AND EVALUATION

By NAN K. KELLEY

Research and developments in health fields have led to a growth in the kinds and numbers of products. New disciplines have combined with new materials to create new horizons in patient care. Increasing complexity and number of procedures, as well as increasing specialization of skills of hospital employees, tend to multiply the number and kind of products used in patient care and hospital administration.

To bring order out of chaos, every hospital needs a method for evaluating the products being developed for use in hospitals. The factors contributing to a specific item's acceptability to patients and staff, its appropriateness to its special function, and its efficacy need to be evaluated by the people who are most involved in using it. Not only the hospital administration is interested in the results of the evaluation programs. The manufacturers, who constantly seek to improve their products, rely extensively on the recommendations of the hospital personnel who have participated in the evaluation program.

### Standardization Committee

#### *Purpose of Committee*

One approach is the use of a Standardization Committee as a prime mover in bringing about unification and standardization of as many activities as possible. This group serves a secondary function of promoting communication concerning new products to all members of the hospital staff, since relatively few items can be placed in use without testing and evaluation.

The purpose of this committee has been defined as follows:

1. To give consideration to possible changes in routine supply and equipment items, whereby greater efficiency or reduced cost of hospital operation may be effected.

2. To consider new items of supply or equipment to determine the advisability of their purchase and use by the hospital.

3. To establish specifications for supply and equipment items.

#### *Committee Members and Their Functions*

The members of the committee and their functions may include the following:

- A member from the hospital administrative staff contributes his knowledge of the goals of the hospital and the expectations of the community. The range of items needed in a medical center would vary markedly from that needed in the community hospital.

- A member of the hospital therapeutics committee contributes his knowledge of therapeutics, medical needs, and the acceptability of the products to the practicing physicians who will use them.

- A member from nursing service will contribute knowledge of nursing procedures, nursing activities, and patient reactions to items.

- A member from the business office will contribute his knowledge of the hospital financial status, cost control procedures, and appropriate charges to be made to patients or to departments if such is indicated. He may also report the findings of a comparative cost analysis, if such studies have been made. For example, a study of the cost of hospital processing of gloves as compared with the cost of prepackaged sterile disposable gloves as presented by the manufac-

turers would be of value in reaching a decision as to whether disposable gloves should be used.

The general stores supervisor will add his own knowledge of product transportation and storage, giving consideration to size of shipments, availability and ease of storage, as well as ease of distribution. He will also be concerned with the storage of the items at optimum condition for use.

The CMSSS supervisor will contribute knowledge of processing techniques, distribution methods, and assist with the inservice education program, especially in the proper use of supplies and equipment.

The purchasing officer will contribute his knowledge of supplies available, reliability of the manufacturers, and continuing relationships with the sales representatives.

In addition to the appointed members of the committee, guests such as a doctor, a department head, a sales representative, and nurses who are most familiar with the item may be invited to attend a meeting to contribute specialized knowledge.

#### *Committee Meetings*

As the standardization committee is a standing committee of the hospital administration, monthly meetings need to be scheduled routinely. Additional meetings may be scheduled as required.

#### *Responsibilities of Committee Chairman*

Since the standardization committee is concerned primarily with equipment and supplies, the chairman may either be the purchasing officer or the CMSSS supervisor. Both of these persons are involved constantly with verbal or written reports concerning requests for new items, modifications of items currently used in the hospital, as well as with sales representatives and literature from the manufacturers.

In accumulating material for consideration by committee members, the chairman reviews all the requests and reports forwarded to him concerning equipment and supplies and decides which may be dealt with best by the "standardization committee." Since a major responsibility of this committee is to determine how maximum use can be made of a small number of items, only questions with widespread implications need to be considered. For example, a policy regarding the use of reusable

versus disposable items has implications for the doctors, nurses, patients, and the purchasing department.

In preparing the agenda for the meeting, the chairman provides an opportunity for discussion of items still under consideration and awaiting final decision. Under new business, initial consideration is given to the requests selected by the chairman. Any member may also initiate discussion of any appropriate subject.

### **Testing and Evaluation Programs**

The recommendations from the Standardization Committee to the hospital administrator frequently require more specific information than committee members can supply. Testing and evaluation programs may be necessary to accumulate the data on which the decisions are based.

#### *Types of Programs*

The type of testing program depends upon the item to be tested. Items best tested and evaluated in CMSSS include those in which maintenance of sterility is of prime importance as well as those emphasizing ease of processing in preparation for patient use. Such items as disposable syringes and needles, electric suction and aspiration apparatus, and special sheeting for use with burn patients when dressings are contraindicated, are best tested on nursing units.

#### *Participants in Programs*

In setting up a testing program on nursing units, the standardization committee should enlist the aid of the hospital inservice education staff. Together, they should plan a procedure that will provide an adequate testing situation.

The testing and evaluation group also should include representatives from specialized clinical areas. For example, the planning group for a testing program on the use of paper underpads versus gauze and cellulose underpads should include an orthopedic surgeon and medical-surgical nurses, whereas the planning group for a testing program on disposable syringes would include representatives from the medical staff and nurses from several clinical divisions. Representatives from other departments, such as Clinical Laboratory, Anesthesiology, and Outpatient Department, should be consulted about supplies and equipment intended for their use.

## *Activities of Programs*

Planning would begin with the identification of the data necessary for adequate evaluation. On an item such as disposable syringes, data would be needed on such questions as the type of injection given, the medication administered, the site of administration, the accuracy of the scale, the ease of handling, and the maintenance of safety standards on discard. A questionnaire may be used to record the observations on which these data may be based. The testing and evaluation group would also need to develop appropriate nursing procedures for using the item to be tested.

The nursing units to initiate the testing program may be selected on the basis of the patient population, the enthusiasm and conscientiousness of the nursing staff, and the cooperation of the medical staff. To promote reliability in observations, a brief period may be set up during which the staff members can practice recording their observations and opinions before the predetermined trial period begins. Evaluation of the results of this initial trial will reveal the adequacy or inadequacy of the testing program. Following revision, additional trials of the testing program may be made on other nursing units, using the same selection criteria.

Having determined the additional nursing units necessary to elicit sufficient data on which to base findings, the testing and evaluation group can then decide on the length of the trial period. This determination may be made on the basis of the projected estimate of the number of times the item is likely to be used and the kinds of situations requiring this type of equipment.

After the data forms are completed, the testing and evaluation group tabulates the data collected and formulates the conclusions. Recommendations and supporting data are then prepared to be forwarded to the standardization committee.

Such testing not only evaluates the effectiveness of the item but also promotes acceptance by staff members and patients. The latter is accomplished by providing a period during which the negative aspects of adjustment to a new technique resulting with the introduction of a new item or equipment may be resolved before a final decision on its adoption is made by the hospital administration.

The group planning the testing program might consider its function to include study of the item itself and consultation with the manufacturer's

representatives concerning the specific advantages of the item.

Certain items may appropriately be tested in the central medical and surgical supply service. For example, in a dressing, comparison of products will reveal difference in texture of the gauze, whether the filler is cotton or cellulose, whether the dressing is smooth or bulky, whether it is more or less absorbent than the product in current use, and whether or not this dressing will meet the needs of some of the uses to which dressings are put, such as the quality of dressing needed in burn cases as compared to the quality needed in cases of massive drainage. The quality of the dressing is dependent on both gauze and filler.

Partial testing in CMSSS, supplemented by testing on the nursing units may be required in some instances. Testing adhesive in CMSSS, for example, is limited to comparison of the quality of the cotton backing, and its flexibility as indicated by its thinness. Further testing can be carried out only in the nursing units. Manufacturers' claims as to the nonirritating qualities of the adhesive, nonallergenic quality, moisture-retaining properties, and cleanliness on removal can only be evaluated when the product is in actual use. Elastic bandages also require combined evaluation in CMSSS and the nursing units.

Having completed the necessary testing of the product and formulated the recommendations, the CMSSS supervisor forwards the findings to the standardization committee.

## **Implementation**

When acting on recommendations, the standardization committee reviews the data in light of the overall purpose of the hospital, decides on the effectiveness of the item, determines budgetary feasibility, and may decide to propose its adoption to the hospital administrator. Or, using a simpler technique, the members of the committee may elicit verbal opinions and, having tabulated them, report their findings to the hospital administrator.

Following the adoption of the new or improved item, the task of reviewing and adapting the required procedure for general hospital usage can be assigned to the inservice education group.

Disseminating the appropriate information may be done in several ways. An administrative memorandum may be sufficient when the use of the item is closely restricted or simple enough to

be self-evident. More complex items or those in wider use may require an educational sequence before their use and acceptance becomes general. Group discussions, audiovisual aids, and other promotional techniques may be utilized by the inservice group to achieve this end.

When newly adopted products necessitate the use of new skills, the inservice education department may be asked to help develop and implement programs to provide employees with the requisite skill. In planning such programs, the inservice group must recognize the dual objectives of acceptability and skill. The cooperation of sales representatives should be enlisted to help promote acceptability and, on occasion, skill development. Following the initial educational program, supervisory personnel of the area involved are allocated the responsibility of continuing the promotional and educational programs until use of the item becomes a routine.

Complaints concerning equipment may at times be referred to the standardization committee, if an item in general use does not meet the standards necessary for good patient care. In this event, the committee may decide to review and re-

evaluate products designed for the same purpose. The nature of the item will determine the evaluation technique best suited to furnish the necessary information, and the standardization committee will then proceed in the usual manner.

## Conclusion

The standardization committee, above and beyond its function of setting and maintaining standards of equipment and supplies in the hospital, can serve a vital role in promoting morale by involving realistically, through product-testing programs, increasing numbers of hospital employees in the decision-making process. The proliferation of new and improved products is such that the standardization committee cannot conceivably carry out the necessary testing without the help of many employees nor can it formulate correct decisions and appropriate policies without such help.

The goal of optimum patient care can only be achieved when patients and staff are provided with safe and effective supplies and equipment.

## Chapter V

### PERSONNEL

By MARY HELEN ANDERSON

#### Inservice Education

For the successful functioning of the Central Medical and Surgical Supply Service, not only is it necessary to have personnel in proper quantity and quality, but an effective inservice education program is required. Personnel must receive orientation and continuous training in the complexities of their jobs. The following suggestions may therefore be helpful in planning such a program.

#### *The Supervisor*

Principles of supervision in the CMSSS are essentially the same as those in any field. If a professional nurse is appointed supervisor of the CMSSS, she should be familiar with administrative or managerial techniques. If a nonnurse supervisor is selected, then it is imperative to appoint a nursing supervisor in an advisory capacity.

In addition, for the nonnurse, concentrated study of hospital and medical terminology is of first importance. If possible, the new supervisor should enroll in a short course in terminology, such as is offered to medical record librarians or radiology technologists. A number of workbook manuals are available from medical book dealers. If a formal course is not available, a fair substitute would be an arrangement with a professional nurse to discuss the lessons and to elaborate on the material. Four or five tutoring sessions should provide a good background. A positive effort should be made to increase the medical vocabulary daily and relate the new words to CMSSS problems.

Basic courses in general psychology, personnel psychology, and supervision are most helpful.

Such assistance and information may be obtained from college and university libraries. The use of consultants in management techniques and methods engineering should not be overlooked. If the hospital does not sponsor educational programs, several CMSSS supervisors could form a group and pursue these studies together. In smaller communities, away from metropolitan centers, a retired college professor or other teachers might be used as resource persons.

One of the most significant contributions to the education of the supervisor is made by the institutes and workshops sponsored by various associations. Also of value are the commercially sponsored programs offered by manufacturers of surgical supplies and sterilizing equipment. If the department is a new one—or in the development or expansion stage—the educational services offered by the company installing the sterilizing equipment can be utilized to advantage.

The importance of a well-defined plan cannot be emphasized too strongly. Geographical or economic limitations should not prevent the formulation of specific objectives. Certainly some phase of continuing education should be scheduled each year. For the supervisor taking a new position, it is essential that the educational opportunities provided by the hospital be discussed in specific terms. It is recommended that the minimum at least be stated, for example, "tuition and travel expenses will be provided for at least one institute each year." The supervisor should take the initiative and request to attend the meetings as they are made available.

The value of hospital literature should not be overlooked. The hospital should subscribe for several hospital magazines to be used by the CMSSS



staff. Superficial perusal of a magazine routed throughout the hospital is not sufficient. The articles pertaining to other departments provide an excellent means of broadening the professional horizons of the CMSSS supervisor.

Informal means of adding to the knowledge of the supervisor can be developed easily. Because of the individual differences in people and the different situations in hospitals, a valuable addition to the educational program is provided by visits to other CMSSS departments. Maintaining communications with other supervisors is most helpful. To this end, active membership and participation in related local and national organizations provides excellent opportunities for exchange of ideas.

### **Other Personnel**

The extent to which inservice education is developed in the CMSSS depends on a number of variables. If the hospital has a well-organized centralized personnel department, much of the preliminary work is already done when an employee begins work in CMSSS. If the department is large and job descriptions draw clear lines of duties, the approach will differ from that used in a small department with two or three employees. The principles of training do not vary, however. Some important points to observe include:

1. Provide a definite, regular time. Nothing detracts more from the importance of a training session than frequent postponement, cancellation, or rescheduling.

2. Make definite plans for material to be covered. Be firm about sticking to the subject. Consider the subject matter as a whole and then break it down into easily assimilated portions. (For example, the subject of sterilization cannot be covered in one session.) The sections should be so arranged as to challenge the learner by making him exert some effort to cover the material and retain a good portion of it; the lessons should not, however, cover so much as to discourage the student to the extent that he feels it useless to attempt the study. Teaching itself is not learned in a day. The wise supervisor-teacher will experiment a little, keep careful notes of employee reactions, and strive to improve techniques and judgment.

3. Use words that the employee can understand, but don't "talk down" to him.

4. Provide demonstrations, practice periods and periodic review sessions.

5. Evaluate the effectiveness of your teaching by frequent observation of the employee at first; less frequent checkback as time goes on; and perpetual spot checking even for a span of years. Shortcuts learned along the way might be disastrous. Especially important is the spot-checking technique if the buddy system is used, in which one employee is assigned to teach another employee.

It is suggested that the orientation program include the following:

1. Introduction to CMSSS.

- Brief description of CMSSS as a hospital department.

- A review of the development of the department in *this* hospital.

- The relationship of the CMSSS department to other parts of the hospital. Define the duties and responsibilities of CMSSS personnel with reference to the other hospital personnel, including doctors, head nurses, staff nurses, student nurses, aides, and orderlies.

- The lines of authority and responsibility within the department.

- The physical layout of the department. The geographical position of CMSSS in the hospital. (Of great importance is a tour through the hospital. Note: This should be repeated after 4 weeks of employment. It has much more meaning then.)

2. Terminology.

- General hospital terms.

- Departments of the hospital (include abbreviations and synonyms).

- CMSSS terms.

- Large items of equipment.

- Trays (list names).

- Procedures (terms *only* at this point) such as mechanical cleaning, disinfection, and sterilization.

3. Telephone technique.

4. Dispensing and delivering supplies and equipment.

5. Specific procedures (include all procedures to be taught).

6. Work simplification techniques. The steps in making a simple flow process chart to learn to "work smarter, not harder."

7. Brief discussion of the budgetary limits of the department; economy measures, work planning.

The development of an educational program on

an inservice basis is a real challenge. Provisions should be made so that learning skills and technical procedures are not left to trial and error on the job.

### *Part-Time Personnel*

The success or failure of the utilization of part-time personnel in CMSSS depends on their selection and the educational program.

The personnel director or person responsible for the assignment of part-time personnel should realize the importance of assigning the same individuals to CMSSS over a period of time. It is not practical to expect the supervisor to teach a new employee every few days. The arrangement should be made on a definite schedule so that the CMSSS supervisor can plan specific assignments and depend on a certain amount of work being performed. In turn, the supervisor should be careful to assign tasks that are not too difficult or too monotonous in order to hold the employee's interest at a high level. The part-time worker should be made to feel part of an important team.

A typical program might include:

1. Orientation to CMSSS: What it is and what it does in the hospital. Brief statistics (number of syringes dispensed, trays processed, and the like) can be helpful.
2. Explanation of the functions of CMSSS; the importance of strict adherence to instructions; the necessity for asking questions; a clear definition of "off limits for part-time personnel" activities.
3. Specific procedures such as the following:
  - Stamping envelopes for sterilizing small items.
  - Lettering for labels.
  - Packaging materials for sterilization.
  - Checking inventory.
  - Delivering supplies to nursing units.
  - Pickup of used supplies and equipment.
  - Answering telephone.
  - Typing reports.
  - Checking supplies for storeroom order.
  - Assembling patient care kits.
  - Restocking storage bins.

The importance of including part-time personnel in departmental activities cannot be overstressed. They should be included in problem-solving sessions and general departmental meetings where procedures and policies are discussed. If a part-time employee can be assigned to work

closely with one particular person, a minimum of confusion and insecurity will be experienced.

The entire educational program for CMSSS will depend much upon the enthusiasm and ingenuity of the supervisor-teacher. For a person with a progressive, open mind, there are no limits to the adventure of CMSSS work. The important ingredient for the success of the department—and basic to *all* education—is the sharing of information. In this, the supervisor must take the lead.

### *Job Descriptions*

Carefully prepared job descriptions are important for all personnel in the Central Medical and Surgical Supply Service in order to realign duties and to determine the proper assignment of duties to personnel.

A job description is a summary of the important facts pertaining to a particular job. Generally, it includes the title, qualifications, activities in general, specific responsibilities, promotional opportunities and salary. The hospital personnel director should be able to provide the approved format for use in the individual hospital.

The following descriptions of positions for CMSSS personnel are suggested as guides only.

#### *Supervisor*

##### *Title:*

CMSSS, Supervisor  
Director, CMSSS  
Assistant Director, CMSSS  
Manager of CMSSS  
Head Nurse, CMSSS

*Responsibility:* Reports to Administrator (or Assistant); Director of Nursing Service; or other administrative official.

*Qualifications:* Mature adult, good health (moves about and stands much of the time). High school graduate required; professional registered nurse preferred; licensed, practical nurse with additional courses in surgical procedures and sterilization techniques accepted. Additional courses in methods engineering, research techniques, work simplification, supervision, personnel, psychology and experience as CMSSS supervisor or operating room supervisor desirable.

*Activities in General:* Directs activity of other nurses and auxiliary personnel in the CMSSS. Must have ability to observe minute details of

procedures and products. Must be able to teach—by illustration, demonstration, and lecture; also be able to write procedures. Will attend seminars, institutes, conventions as assigned by administration.

Will work independently or with hospital personnel in conducting and contributing to research projects which refer to new procedures, products, and methods in CMSSS.

Keeps statistics as assigned by administration and reports at regular intervals. Recognizes significant trends and makes recommendations regarding them. Suggests to administration possible studies and research projects. Must substantiate recommendations with scientifically derived data.

Is responsible for the economical handling of CMSSS supplies and equipment; provides an inventory of sterile supplies adequate for routine patient needs and for emergency requirements.

Develops and recommends to administration policies governing the use of supplies and equipment.

*Specific Requirements:* Stands or walks most of the time. Establishes and maintains good rapport with professional and nonprofessional people in the hospital. Has a good, but controlled, sense of humor.

Does not resist change unduly. Is able to modify procedures without compromising technique. Has a flair for the experimental; is not restricted by tradition.

Must be able to delegate duties while accepting the responsibility for the actions of others.

Does not "panic" easily, yet recognizes the need for immediate response to the true emergency. Is not easily bored with routine duties.

*Promotional Opportunities:* Because of the wide range of activities required of a CMSSS supervisor, the significant and far-reaching decisions that must be made, and the close relationship to many other departments of the hospital, the supervisor can quite naturally be considered a candidate for higher levels of administration based on his qualifications. With continuous personal and professional growth and development, the CMSSS supervisor can use this position as a natural step to more responsible positions.

*Horizontal Relationships:* To all department heads within the hospital.

*Committee Participation:* Member of Committees such as inservice education, procedures,

standardization, infections control, safety, and disaster.

*Salary:* The person in charge of CMSSS should be paid according to the responsibilities delegated and qualifications required. The salary will naturally vary with the section of the country and the size and scope of the department.

Until recently there have been no national standards for classification of the CMSSS supervisor. Hospital administrators should carefully evaluate the importance of this strategic area in the hospital, the responsibilities of the position, and qualifications required of the supervisor, and set the salary accordingly.

### *Assistant Supervisor*

#### *Title:*

Assistant Supervisor of CMSSS

Assistant Director of CMSSS

Assistant Manager of CMSSS

Assistant Head Nurse CMSSS

*Responsibility:* Reports to the person in charge of CMSSS: Assumes responsibility for the department in her absence.

*Qualifications:* All of the qualifications needed for the supervisor, except those which can be acquired on the job. An example would be the experience and special skills relating to CMSSS.

*Activities in General:* Direct supervision of auxiliary workers; orientation of new employees and the teaching of new and revised procedures.

Evaluates personnel and reports to supervisor. Assists supervisor in maintaining inventory. Assists supervisor in formulating procedures. Assists supervisor in exercising necessary controls in handling supplies and equipment.

May be responsible for a tour of duty different from the one on which the supervisor works.

*Promotional Opportunity:* To CMSSS Supervisor.

*Salary:* Since the assistant is frequently a nurses' aide who has proven capable of additional responsibilities, the tendency may be to underrate the importance of the position. Again, the salary should be determined by the responsibilities of the position and the qualifications required.

### *Evening and Night Supervisors*

Whether evening and night supervisors are required depends on the size of the department, scope of its services, and the responsibilities delegated to

the supervisor. The job description may be the same as that for the assistant supervisor.

#### *Auxiliary Personnel*

##### *Title:*

CMSSS Aide  
Technician

*Responsibility:* To CMSSS supervisor and/or the assistant supervisor.

*Qualifications:* Experience in a CMSSS department in a hospital and in an operating room is desirable. High school graduate: Possess manual dexterity, liking for detail and perseverance in completing a task.

*Activities in General:* Listens to instruction, translates it into activity, and reproduces what is taught. Must be extremely conscientious with regard to procedures—without causing dissension among less skilled employees. Many tasks are detailed, repetitive, slow, and even boring. Must agree to refrain from “short cuts” where technique is involved.

Has hands in water and detergent solution frequently. (Persons with specific allergies to detergent and plastic should be screened carefully before employment.) Is on feet and/or walks most of the day. Immediate environment may be warm with high humidity (because of sterilizers). Some lifting and pushing of equipment may be required.

Is expected to take verbal requests in the department and by telephone.

Must often work closely with others—both in physical proximity and in cooperative effort.

Must meet deadlines; be able to gage and space work assignments. Is frequently interrupted in work to perform priority tasks. Must accept rotating tours of duty and pressure assignments and occasionally work overtime.

*Promotional Opportunity:* To assistant CMSSS supervisor, if qualifications can be met.

*Salary:* Equates with senior nurses' aides; if hospital has level for surgical technical aide, salary should be on same scale. Might be considered to be equal with unregistered laboratory technician.

##### *Title:*

CMSSS Clerk

Secretary (possibly, but not recommended)

*Responsibility:* Reports to supervisor of CMSSS and/or assistant.

*Qualifications:* High School Graduate. Able to type 40 w.p.m. Legible handwriting. Pleasing telephone voice. Accurate in handling figures and records. Knowledge of simple filing system. Experience in hospital desirable, but not essential.

*Activities in General:* Takes telephone orders, relays to appropriate person. Compiles department statistics. May complete charge slips. Copies assignment and work schedules. May prepare general stores order sheet. Types procedures for manual; may make stencils. Must learn terminology of the department with numerous synonyms. May be asked to fill simple orders. May have to handle emergency and stress situations at telephone.

*Promotional Opportunity:* To clerical position of greater responsibility elsewhere in hospital.

*Salary:* Equates with clerk-typist in hospital scale.

##### *Title:*

CMSSS Messenger

Orderly

*Responsibility:* Reports to CMSSS supervisor and/or assistant.

*Qualifications:* May be a high school student or undergraduate. May be a part-time worker, but hours would have to be definitely arranged and permanent. Ability to read a requirement.

*Activities:* Walks almost all of the time on duty. Delivers supplies and equipment; is responsible for pickup service. May be asked to perform simple manual tasks between deliveries and collections. May be required to work rotating tours of duty.

*Promotional Opportunity:* Clerical or messenger duties of greater responsibility elsewhere in hospital.

*Salary:* Probably lowest on hospital scale, since requirements are at a minimum.

## Chapter VI

# DISASTER PLANNING

By SISTER M. DIANE, S.S.J.

Disaster may be defined as a sudden catastrophe which may be completely unexpected or may be partly predictable because of surrounding elements or factors. An element may be a river that overflows at certain times of the year or a hurricane or tornado in geographical regions that may be subject to them. A factor may be a mill or manufacturing plant. Examples of disasters which may occur unexpectedly are fire, train accidents, or warfare. In either situation, predicted or unexpected, preparedness is an essential requisite to contributing service to persons injured in any form of disaster.

### Aim of Program

Disaster planning in the central service department has as its aim to render supplies and service in time of emergency. When considering the impact of disaster and its effect on the hospital and on the department, there are several questions that bear consideration.

- What supplies and equipment should be prepared?
- In what amounts should they be prepared?
- Where will the supplies and equipment be utilized?
- How will the supplies and equipment be transported in time of disaster?
- At what point of the disaster program should they be transported?
- What control will be used for the items requested?
- If these items are prepared in advance, what means should be taken to maintain their sterility?

### *Responsibility for Disaster Program*

The master plan for a disaster program is the responsibility of administration. It includes providing adequate supplies and equipment whenever needed by medical, nursing, and other personnel to care for patients. The CMSSS supervisor should participate in the development of the master plan and serve as a member of the disaster program committee. The program should include a directive as to the specific areas that will be utilizing the supplies. Special items may be requested because of their availability or flexibility.

### *Practical Application*

Every hospital should have a formal disaster program. If this should not be the case, the supervisor of CMSSS should take the responsibility to make provision for the necessary supplies and equipment, as the basic purpose of the department is that of service. What more crucial time could there be of providing that service than the time of disaster?

### *Foresight in Planning*

Standardization of supplies and equipment is especially beneficial in time of disaster and great emergencies. Increasing the inventory level is also a reasonable approach to provide for impending or unpredictable disaster.

### Principles of Disaster Planning

The following principles should be observed in disaster planning:

- The supervisor must understand the meaning of disaster and all its implications on the central service department.

- She should know and frequently review the hospital's and the community's disaster program.

- She must not only assume the responsibility of her role in the program but instill in the personnel an awareness of their obligation to contribute in time of disaster.

- Supplies and equipment that have been made the responsibility of the department should be prepared and available for immediate delivery in time of disaster.

- This equipment should be protected from dust and contamination because sterility is just as essential as availability.

### Procedures for Planning

The following procedures will facilitate disaster planning:

1. Estimate the added number of patients that could be treated by the hospital in time of disaster.

2. Consider the various types of disaster that may occur in that specific area, such as flood, tornado, factory fire, or snow storms.

3. Estimate the amount of supplies and equipment that might be required.

4. Prepare shelves or carts in which these supplies may be located.

5. Increase inventory to allow for extra supplies.

6. Prepare supplies in convenient packages.

7. Place all sterile supplies (when cooled) in clear, new plastic bags and heat seal. With this method, supplies may be stored indefinitely if the plastic bag remains intact and in an area not routinely used. Be certain labels can be read easily.

8. Make a routine check of supplies and equipment.

9. Alert all personnel to the nature of the sup-

plies and equipment and of their responsibility in participating in the disaster program.

### Minimum Requirements for Disaster Supplies

- |  |                                       |
|--|---------------------------------------|
| 1. airways                                       | 9. sterile gloves                     |
| 2. antiseptics                                   | 10. sterile needles and syringes      |
| 3. adhesive tape—all sizes                       | 11. suture sets and suture material   |
| 4. bandages—roller and elastic                   | 12. slings                            |
| 5. burn dressings                                | 13. splints                           |
| 6. dressings—all sizes                           | 14. vaseline gauze                    |
| 7. intravenous solutions and administration sets | 15. venesection and tracheotomy trays |
| 8. identification cards                          | 16. tourniquets                       |

Each hospital should add supplies and equipment to the minimum requirements listed above, depending on its location in relation to possible area disasters, such as flood or tornado areas.

### References

- Hahn, Jack. "Stock Taking and Stock Piling for Massive Disaster." *Hospitals*, 37:46-48. December 16, 1963.
- Herman, James J. "Are You Ready for Disaster?" *Hospital Management*, 92:53-54. August 1961.
- "Mass Casualty Plan—Disaster Plan." *Bulletin of the Joint Commission on Accreditation*, No. 28, December 1961.
- Shafer, Margaret K., R.N. "Disaster Planning for the Central Supply Room." *Hospital Topics*. 38:97-99. December 1960.
- U.S. Department of Health, Education, and Welfare, Public Health Service. *Central Supply Section of the Civil Defense Emergency Hospital—Health Mobilization Series F-3*. Washington, D.C., U.S. Government Printing Office, PHS Publication No. 1071 F-3. 1964. 96 pp.
- U.S. Department of Health, Education, and Welfare, Public Health Service. *Disaster Nursing Preparation in a Hospital Nursing Service—Health Mobilization Series D-3*. Washington, D.C., U.S. Government Printing Office, PHS Publication No. 1071 D-3. 1965. 53 pp.
- U.S. Department of Health, Education, and Welfare, Public Health Service. *Nurses' Ward Management Guide for the Packaged Disaster Hospital—Health Mobilization Series F-12*. Washington, D.C., U.S. Government Printing Office, PHS Publication No. 1071 F-12. 1965. 27 pp.

## Chapter VII

### BUDGET

By SISTER M. DIANE, S.S.J.

#### General Considerations

A budget may be defined as a basic financial plan to give the best possible care at the least cost. It can be interesting and a great aid in the organization of the department. The budget should be the financial expression of the supervisor's future plans for the department. It will be meaningful and effective only when activities are integrated and planned in advance. The budget must be considered as an operation plan and not just a financial one. When considering a budget as a basic plan, remember that planning means basing action upon thorough investigation, consideration, and research. One must look with an eye to the future and a keen recollection of the past. An eye to the future involves foreseeing the problems that may arise in the coming year and deciding now how to deal with them. Each supervisor must be constantly on the alert for procedures that may appear to be a nicety this year but may be a necessity next year. A department operating effectively with 10 personnel this year may need to increase the staff to meet an extra workload in the future. The influx of disposables into the hospital may necessitate more storage area, which would mean an increase in the indirect budget.

#### Definition of Terms

*Cost* is a monetary value applied to an asset or a service by cash payment or commitment of credit. When costs are used for rendering service to a patient, they are called *Expense*. Costs which are held over to be used in the future are called *Assets*. For example, the costs of dressings used in the department are called expense, but when they are included in an inventory for use in the

future they are called assets. In each budget period a portion of the expense will be considered depreciation.

*Depreciation* may be defined as the recovery of the cost of an asset over its estimated useful life. For example, a sterilizer may cost \$1,200 and have an estimated life of 10 years. The yearly depreciation then would be one-tenth of \$1,200 or \$120. Therefore, our sterilizer which cost \$1,200 in 1963 would have an asset value of \$1,080 in 1964, because it had depreciated 10 percent in 1 year. When the cost of the sterilizer has been completely recovered over its 10-year life, we refer to it as fully depreciated. However, the sterilizer may become outmoded or obsolete before it has become fully depreciated and may therefore need replacing. This replacement would be included in the capital budget. On the other hand, equipment is not necessarily obsolete when it is fully depreciated, and may continue in use.

*Capital budget* consists of the total cost of all major equipment or "fixed assets" that must be acquired during the budget period.

*Expense budget* is the sum total of those expenses or costs essential for operating a department.

*Direct costs* includes supplies, service fees, replacements, salaries, and departmental depreciation.

*Indirect cost* describes the cost of services received by the department from other departments or outside suppliers. These include space, heat, light, power, laundry, and repair services. Another indirect cost is building and other nondepartmental depreciation. Indirect costs are used in preparing the cost analysis to determine the total expense of the department.

*Cost Analysis* may be defined as a study of the expenses for a department. The total cost of all equipment, supplies, and services rendered provides the background for future planning. Dollar figures must relate to statistics.

Cost analysis has the following five main objectives:

- To provide necessary information in setting just rates for supplies and equipment used.
- To furnish a basis for intelligent requisitions for new supplies and equipment.
- To fulfill requirements of hospital administration and nursing service.
- To provide a measure of the effectiveness of the operations performed within the department for which the costs are determined.
- To provide a basis for future planning.

Cost analysis is separate from the bookkeeping system and may be conducted at regular intervals or on a special study basis.

### Objectives of Budgeting

The main objective of the total hospital budget, as well as the department budget, is the best patient care at the least possible cost. The department cannot be operated independently of the rest of the hospital. What directly affects the hospital, indirectly affects each department as a part of the hospital team.

More specific budget objectives are planning and control. These are accomplished by determining and forecasting an intelligent estimate of the following:

- The amount and type of services to be performed by the department.
- The amount, classification, and cost of personnel required to render that service.
- The fixed assets (capital) required and their cost.
- The volume and types of supplies necessary to render service and their cost.
- The efficiency of the activities performed within the department.

The budget provides a standard for comparison of the actual results obtained with the forecasts made. It stimulates cost consciousness throughout the department and assists management in anticipating working capital needs and in planning for the procurement of fixed assets. The main objective of the department is service, both to the

patient and to other departments in the hospital. The budget will serve as a means of controlling the costs of the services rendered.

### Principles of Budgeting

Motivation, coordination, and control are the three essential constituents of budgeting.

*Motivation* of supervisors to perform in accordance with their budgets is high. Having prepared the budget, they find themselves being measured by it by their own superiors. The preparation of the budget can be equally valuable in helping the supervisor to create a desire in each individual worker to give his best efforts to the job at hand.

*Coordination* is necessary to instill the team viewpoint in the individual employees. In their zeal to do a good job they must remember to work in the best interests of the hospital as well as their department.

*Control* describes that function of supervision which directs all activities of the department toward one goal. This is often accomplished by the specific act of budgeting. Many tools are used in control. They range from strict accounting of supplies to locking cupboards.

Control is facilitated if supervisors are given a report at intervals to indicate the comparison between their budgeted performance and their actual performance. Although the expression of budgeted results in dollars helps to impress supervisors with the effect of their projected activities, the budgets may be more useful for control purposes when expressed in quantities of supplies or time units of hours saved in the department.

Informal reviews of budgets by the budget committee will help beginners in budgeting avoid both an over-conservative and an over-optimistic approach. Every effort should be made to develop a realistic budget.

### Preliminary Budget Preparation

Unless the supervisor has the cooperation of employees in the department, the budget will not be successful. Before budgeting is underway, all personnel should be briefed on the financial problems of the hospital. Their assistance and suggestions may be helpful in simplifying procedures. The accounting, purchasing, and personnel departments and any other related departments



should be consulted as well as the responsible administrative officials. In the actual development of the budget, it is necessary to:

1. Review the functions and activities of the department with a view to simplification of procedures.
  - (a) Study procedures for possible duplications.
  - (b) Consider the possibility of installing saving devices.
2. Review budgetary requests to assure that they will provide only for essential and improved patient care.
  - (a) Make personnel time studies and re-evaluate work assignments.
  - (b) Consider the possibility of a shorter workweek or reduction of workload and the elimination of overtime.

If the budget is to be a basic plan for the improvement of the department, statistics will have to be identified to show the amount of service rendered by the department in the past 3 years and the anticipated level of service in the coming budget year, the cost of these services in the past, and how plans can be made for the future.

As previously noted, the main function of the department is to give service, either directly to

the patient (revenue-producing service) or indirectly to departments that render direct service to the patient (nonrevenue service). Many functions within the department involve cost but do not produce revenue.

Revenue in the hospital is measured by patient days. Each supervisor is aware of the amount and type of service provided to other departments, but to assure a realistic view, the patient days for the past 3 years should be obtained from the medical records department. From this information, an estimate can be made of the amount and type of patients requiring service in the budget year.

Figures 8 (a) and (b) and 9(a) represent the actual census taken from a general hospital with a bed capacity of 294 beds and 60 bassinets.

Patient days totaled monthly in various clinical services over a 3-year period will be helpful in determining the possible workload for the department for the following or budget year as shown by figure 9(b). Census in specialty areas may increase or decrease, depending on the various factors in the community. No two hospitals can plan alike. Facilities may be added that would increase the surgical census. An aging community in the hospital locality may decrease the obstetrical or pediatric census. Comparison of the past 3 years

**Figure 8. Patient-Days for Years 1961-62**

General Hospital—294 Beds

(a)

Patient-days by month—1961

Service	Jan	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct	Nov.	Dec.	Total
Surgical.....	1,969	2,175	2,273	2,384	2,334	2,436	2,267	2,648	2,309	2,390	2,383	2,302	27,870
Medical.....	2,327	2,215	2,589	2,060	2,294	2,219	2,491	2,023	2,318	1,817	2,200	2,096	26,649
Obstetrics.....	2,014	1,981	2,059	1,904	2,019	2,309	2,082	2,389	2,049	1,737	1,874	1,916	24,333
Pediatrics.....	1,742	1,774	1,720	1,423	1,417	2,036	1,574	1,384	992	1,329	1,583	1,448	18,422
Total.....	8,052	8,145	8,641	7,771	8,064	9,000	8,414	8,444	7,668	7,273	8,040	7,762	97,274

(b)

Patient-days by month—1962

Service	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Surgical.....	2,059	2,461	2,454	2,337	2,593	2,555	2,035	2,213	2,329	2,354	2,298	2,460	28,148
Medical.....	2,625	1,866	2,362	2,129	2,568	2,134	2,032	2,373	2,374	2,487	2,304	1,929	27,183
Obstetrics.....	1,676	1,692	1,661	1,693	2,193	1,849	1,652	2,027	2,282	2,193	1,914	1,884	22,716
Pediatrics.....	1,280	1,592	1,695	1,566	2,210	1,753	1,072	1,137	1,068	1,077	1,832	1,696	17,978
Total.....	7,640	7,611	8,172	7,725	9,564	8,291	6,701	7,750	8,053	8,111	8,348	7,969	96,025

Figure 9. Patient-Days for Years 1963-64

General Hospital—294 Beds

(a)

Patient-days by month—1963

Service	Jan	Feb	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct	Nov.	Dec	Total
Surgical.....	2,358	2,491	2,908	2,907	3,109	2,975	2,355	2,362	2,469	3,246	2,921	2,604	32,705
Medical.....	2,059	2,031	2,341	2,061	2,188	2,620	2,976	2,620	2,150	2,336	2,316	2,100	27,798
Obstetrics.....	2,061	1,426	1,943	1,837	2,115	1,882	2,004	1,988	1,979	1,690	1,800	1,910	22,035
Pediatrics.....	1,960	1,834	1,777	1,370	1,785	1,747	1,021	1,622	1,166	2,389	1,960	1,820	20,451
Total.....	8,438	7,782	8,969	8,175	9,197	9,224	8,356	8,592	7,764	9,661	8,997	8,434	103,589

(b)

Budget year 1964

Service	Jan.	Feb.	Mar	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov	Dec.	Total
Surgical.....	2,400	2,520	2,840	3,000	3,100	3,020	2,500	2,400	2,500	2,900	2,900	2,600	32,680
Medical.....	2,250	2,080	2,300	2,100	2,300	2,600	2,750	2,700	2,200	2,350	2,350	2,100	28,080
Obstetrics.....	2,010	1,575	2,010	1,750	2,100	2,000	2,000	2,100	1,950	1,700	1,650	1,800	22,645
Pediatrics.....	1,840	1,821	1,750	1,500	1,700	1,750	1,000	1,500	1,000	1,700	1,850	1,800	19,211
Total.....	8,500	7,996	8,900	8,350	9,200	9,370	8,250	8,700	7,650	8,650	8,750	8,300	102,616

should provide a reasonable forecast for the budget year. A comparison of the patient days in figures 8 and 9 shows that there has been an increase in the surgical beds and a gradual decrease in the obstetrical beds. Figure 10 illustrates clearly the fluctuation of the departmental census.

If the CMSSS supplies all the surgical packs, instruments, basins, and the like for the operating area as well as all the preparation trays, dressings, and suction equipment for the surgical floor, this will be reflected in the amount of service planned for the following budget year, not only in the volume of work and the amount of labor, but also in the volume of supplies involved.

Statistics must be understood and properly interpreted to personnel. Unless they are correct, they may result in poor decisions. Their importance cannot be overemphasized. They may be regarded as dependable barometers for making predictions for future demands on the department. The number of patients, the length of their stay, and the type of accommodation provided must be considered. Studies have shown that the average surgical patient remains in the hospital 5 days. During the first 3 days of his stay, an increased demand

is made on CMSSS because of preoperative and postoperative procedures. After the third day, a general decline in demand occurs. The patient is recovering and less of the equipment and supplies provided by CMSSS are needed. Therefore, as the patient's length of the stay increases, the department's services and, incidentally, revenue decline.

The department has certain fixed cost or expense regardless of patient days. The variable cost and revenue are reflected in the number of patient days. The budget should be flexible enough to allow for this difference.

### Composition of a Budget

The master budget, or the total budget for the hospital, consists of three main sections and is classified as to the purposes these sections serve.

1. Operating Expense Budget
2. Capital Budget
3. Revenue Budget

For the CMSSS supervisor, the budget is composed mainly of two parts because the revenue budget is not the direct concern of this department.

Figure 10. Comparative Study of Patient Days for 1961-62-63 and Approximate for 1964

General Hospital—204 Beds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
<b>Pediatrics:</b>													
1961.....	1,742	1,774	1,720	1,423	1,417	2,036	1,574	1,484	992	1,329	1,583	1,448	18,422
1962.....	1,280	1,592	1,695	1,566	2,210	1,753	1,072	1,137	1,068	1,077	1,832	1,696	17,978
1963.....	1,960	1,834	1,777	1,370	1,785	1,747	1,021	1,622	1,166	2,389	1,960	1,820	20,451
1964.....	1,990	1,860	1,810	1,325	1,750	1,740	1,000	1,500	1,250	1,900	2,050	2,000	20,175
<b>Surgical:</b>													
1961.....	1,969	2,175	2,273	2,384	2,334	2,436	2,267	2,648	2,309	2,390	2,383	2,302	27,870
1962.....	2,059	2,464	2,337	2,593	2,555	2,035	2,213	2,373	2,329	2,354	2,298	2,460	28,148
1963.....	2,369	2,491	2,908	2,907	3,109	2,975	2,355	2,362	2,469	3,246	2,921	2,604	32,706
1964.....	2,400	2,520	2,950	3,000	3,120	3,100	2,400	2,400	2,500	3,000	2,950	2,825	33,165
<b>Medical:</b>													
1961.....	2,327	2,215	2,589	2,060	2,294	2,219	2,491	2,023	2,318	1,817	2,200	2,096	26,649
1962.....	2,625	1,866	2,362	2,129	2,568	2,134	2,032	2,373	2,374	2,487	2,304	1,929	27,183
1963.....	2,069	2,031	2,341	2,061	2,188	2,620	2,976	2,620	2,150	2,336	2,316	2,100	27,798
1964.....	2,150	2,080	2,375	2,100	2,300	2,650	2,990	2,700	2,200	2,400	2,350	2,125	28,420
<b>Obstetrics:</b>													
1961.....	2,014	1,981	2,059	1,904	2,019	2,309	2,082	2,389	2,049	1,737	1,874	1,916	24,333
1962.....	1,676	1,692	1,661	1,693	2,193	1,849	1,652	2,027	2,282	2,193	1,914	1,884	22,716
1963.....	2,061	1,426	1,943	1,837	2,115	1,882	2,004	1,988	1,979	1,691	1,780	1,800	22,506
1964.....	2,050	1,475	1,925	1,800	2,100	1,850	1,950	2,000	1,950	1,700	1,760	1,790	22,350

### Operating Expense Budget

The accumulation of the estimated costs of personnel, supplies, repairs, and contracting services for a given period of time provides a statement of the anticipated requirements for the budget year. To this is added an estimate of patient days and

the revenue resulting from routine and special services of the CMSSS. The combination and comparison of estimated revenues and expenses and their results for a given period constitute the operating expense or working budget. Figures 11 and 12 present examples of this budget.

Figure 11. Expense Budget January through June 1964

General Hospital—600 Beds

Central	Jan.	Feb.	Mar.	Apr.	May	June	Total
Salaries to date.....	\$5,348	\$5,348	\$5,520	\$5,502	\$4,830	\$5,348	\$31,896
F.I.C.A. tax.....	17	170	177	200	175	194	1,086
Supplies.....	1,824	1,817	1,634	1,871	1,720	1,957	10,823
Printing.....	43	42	38	44	40	46	253
Stores issues to date.....	3,257	3,243	2,916	3,340	3,069	3,494	19,319
Equipment repairs to date.....	58	58	59	58	58	59	350
I.V. solutions and sets—to date.....	2,174	2,165	1,947	2,229	2,049	2,332	12,896
Miscellaneous.....	584	577	572	642	598	669	

**Figure 12. Operating Expense Budget—1964**  
General Hospital—600 Beds

Audited by _____ Approved by _____		CMSSS Department Supervisor														
Estimate per year	Average estimate per month	Actual expense												Over or under		
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.		Total	
Salaries-----	\$135,403	\$11,284	\$11,129	\$10,268	\$11,591	\$11,045	\$11,409	\$11,236	\$11,476	\$11,299						
Life insurance-----	216	18	16	16	16	16	16	20	21	22						
Social Security tax-----	4,548	379	366	324	361	347	353	345	368	356						
Supplies purchased-----	12,588	1,049	618	1,164	1,482	974	970	784	1,112	1,484						
Stores issued-----	82,236	6,853	7,248	7,219	10,147	6,528	8,462	6,335	7,202	9,577						
Repairs, replacements-----	2,592	216	100	241	402	615	420	320	397	426						
Travel and convention-----	100	8				19	73									
Oxygen and other gases-----	26,086	2,174	778	2,964	2,877	2,716	2,802	2,983	2,876	2,582						
Inservice education-----					15				10							
Depreciation-----																
Other expenditures-----	1,000	83	134	61	149	252	66	21	101	140						
Total-----	264,769	22,064														

Remarks: Monthly to keep Central Service Supervisor informed.

Department Head.

## Capital Budget

The capital budget consists of the total cost of all major equipment or fixed assets that may be required during the budget period. It is sometimes referred to as the plant or equipment budget. Acquisition of equipment totaling \$50 or more (this amount will vary in each hospital) and/or having a life expectancy beyond 1 year should be considered capital purchases and, as such, included in the capital budget. However, replacements of previously acquired assets which may no longer be serviceable would have to be considered as expense. Each hospital decides the standard for determining whether the cost of an equipment item is to be placed in the operating expense or capital budget.

The capital budget should be a plan for improvement. It should include replacements, improvements, and additions. Hospitals will vary in their capital needs, some requiring little or nothing at one period, then because of changed conditions within or without the hospital, requesting large amounts. If needs can be anticipated accurately, the capital budget will be a helpful plan for the future. It provides management with the opportunity to analyze the asset acquisitions that will be required. Decisions are made on the cost and timing of replacement items, result-

ing in fewer replacement problems. Figures 13 and 14 present examples of the capital budget.

## Department Planning

Basically, a budget for a department is a plan, a guide for the improvement of the department (see figure 15). Remember to keep "an eye to the future and a keen recollection of the past." The plan should be an intelligent estimate. Obtain patient days for the past 3 years from the record room and compare them. The expenses of the department may be obtained from the accounting department. The purchasing agent will be able to furnish the cost of purchased supplies. After these statistics have been obtained, compare the 3 years and study them. They can prove very interesting if they are meaningful. The other statistics required are:

- (1) The volume of services rendered;
- (2) The amount of labor spent in this service; and
- (3) The volume of supplies used.

The volume of services represents the total number of trays, dressings, supplies, and equipment that the department has provided to the various areas in the hospital. In reference to the amount of labor spent in this service, statistics relating to

Figure 13. Capital Budget

		1964 to 1965					
		Month	Month				
Audited by _____		Department _____					
Approved by _____		Supervisor _____					
Administrator _____							
Description of equipment	Reason for request	Date needed	Approximate cost				
			Cost, each	Total	Labor	Grand total	
1. Vacuumatic sterilizer. . .	For replacement of obsolete unit that is presently being used.	At once	\$14, 850		Included in price.	\$14, 850	
2. Pel-sonic cleaner. . .	Better cleaning of instruments. Cleaning time cut in half.	Soon as possible.	975		Included in price.	975	
3. Automatic washer for flasks.	Present method of washing by hand very unsatisfactory.	Soon as possible.	3, 680		\$275	3, 955	
4. Covered hampers (2) . . .	Improved technique. . . . .	March 1965	40	\$80	None.	80	
5. Gastric suction machines (4).	Shortage due to increase in surgical procedures.	June-July 1965	675	2,700	None.	2, 700	

The above to be regarded as format to be submitted annually.

Figure 14. Capital Equipment Budget—1964

CMSSS Department

Submitted October, 1963

Item	Requested budget			Approved budget
	Urgent	Needed	Desirable	
Autoclave.....	\$14,850			
Irrigator stands, 4 at \$71.00 each.....	284			
Oral aspirators, 4 at \$215.00 each.....		\$860		
Ultrasonic cleaner.....		975		
Utility carts, 2 at \$65.00 each.....		130		
Thoracic pumps, 2 at \$280.00 each.....			\$560.00	
Intercommunicating system.....			118.50	
Hydraulic bed lift, 2 at \$59.50.....			119.00	
Total.....	15,134	1,965	797.50	

Figure 15. Departmental Expense Budget

Year June 1, 1963, to May 31, 1964

Audited by \_\_\_\_\_  
Approved by \_\_\_\_\_Department \_\_\_\_\_  
Supervisor \_\_\_\_\_

Administrative

Expense element	1961-62, actual	1962-63, budget	1962-63, actual	Increase or (Decrease)	1963-64 proposed budget	Estimate for 19.. versus actual expendi- tures, for 19..	
						Increase	Decrease
Salaries.....	\$36,095.58	\$56,658	\$48,377.69	(\$8,280.31)	\$65,468		
Supplies—Drugs.....	349.00	500	389.80	(110.20)	400		
Intravenous.....	9,468.52	9,000	10,133.34	1,133.34	10,200		
Supplies—Sundry.....	2,990.03	4,000	3,939.08	(60.92)	1,000		
Supplies—Housekeeping.....	275.00	300	374.07	(74.07)	380		
Supplies—Linen.....	821.35	1,000	464.36	(535.64)	480		
Supplies—Medical and surgical.....	43,025.77	45,000	42,017.34	(2,982.66)	47,873		
Supplies—Administrative.....	128.60	150	236.45	86.45	240		
Freight and postage.....					200		
Inservice education.....			†7.50	†7.50			
Journals and membership.....							
Travel.....			†10.60	†10.60			
Conventions and meetings.....		150		(150.00)			
Purchased services.....							
Miscellaneous.....	159.67	100	259.37	159.37	260		
Maintenance and repair*.....	683.52	750	920.67	170.67	950		
Instruments.....					†4,328		
Traction and orderlies.....					†1,680		
Total.....	93,667.70	117,608	107,130.27	4,527.73	133,459		

\*Itemize fully and give approximate cost if work is to be performed by an outside agency.

†Not included in prior years.

personnel will be helpful in preparing the budget. The job descriptions of the various classifications of personnel employed in the department should be reviewed. Labor can be a very costly item, particularly if professional personnel are performing tasks that could very well be performed by nonprofessionals. Has there been unnecessary overtime? Is the time schedule prepared to meet the needs of the department? Are the employees properly motivated? Are they interested in a job well done or are they merely putting in time? Are they made to feel members of the team? These factors are very important in preparing for the budget year. The third statistical requirement is the volume of supplies used. What amounts have been obtained from inventory in the department, from procurement, and how many have been purchased as needed? Have they been utilized to the best advantage? The main objective of budgeting is best patient care for the least possible cost. Quality must never be sacrificed for cost. Economy cannot be defended when essential tasks are left undone.

In a comparison of the estimate of the past patient days and expenses for the department, the following questions may occur. Has the department gradually improved; are there changes that should be made? Perhaps conversion from reusable needles and syringes to the disposable type is being considered. To include this change in the budget for the following year, these steps would be necessary:

1. Obtain the amount of needles and syringes purchased for the past year and their cost.
2. Take a time study on employees processing needles and syringes for 1 year. Example: It takes  $2\frac{1}{2}$  aides 8 hours a day each or 20 hours per day—
  - One aide at \$1.25 per hour times 8;
  - One aide at \$1.40 per hour times 8;
  - One aide at \$1.55 per hour times 4.
 Approximate the cost for 1 year.
3. Ascertain the equipment and supplies used in processing needles and syringes and cost for 1 year.

The total of the three would give you an estimate

of cost of processing the needles and syringes for 1 year.

4. Estimate the needles and syringes issued from the department for 1 year to determine the amount of disposables that would be required.
5. Estimate the projected cost by multiplying the required amount needed by the initial cost.
6. Compare the total cost of processing the reusable type with the total cost of the disposables.

Consideration must be given to the employees who are now employed in processing these items. A certain amount of needles and syringes will still be necessary for special procedures. Ordinarily 4 hours should be adequate to process them. What consideration is to be given to the personnel no longer needed for this task? While the budget is being developed, plans for other activities in the department may be made for such personnel.

To summarize, the budget should be prepared in a realistic fashion to make it a meaningful, flexible plan for the improvement of the department. It can serve as a standard of achievement and encourage cost consciousness in CMSSS personnel. If developed with cooperation from medical records, accounting, and purchasing departments, a budget can be an effective plan for the future.

## References

- American Hospital Association. *Budgeting Procedures for Hospitals*. 1961. Chicago, Ill. 70 pp.
- Ibid. *Cost Finding for Hospitals*. 1957. Chicago, Ill. 313 pp.
- Ibid. *Uniform Chart of Accounts and Definitions for Hospitals*. 1959. Chicago, Ill. 173 pp.
- Baranik, T. R. "Departmental Budget." *Hospital Progress*: 45: 104+. June 1964.
- Block, Louis. "Hospital Trends—Budget-Management Aid" *Hospital Topics*: 32: 33-35. May 1954.
- Ibid. "Hospital Trends—Budget Preparation." *Hospital Topics*: 32: 44+. June 1954.
- Ibid. "Cost Analysis—A Tool for Future Planning." *Hospital Topics*: 32: 22+. April 1954.
- Craft, Nina Bethes. "Budgeting for Nursing Services." *Hospital Progress*: 45: 102+. June 1964.
- Hay, Leon E. *Budgeting and Cost Analysis for Hospital Management*. Bloomington, Ind. University Publications. 1958. 205 pp.